



Department of Design and Construction

SPECIFICATION BULLETIN

SB
19-002

Title: **SCHEDULE OF OPERATIONS**

Prepared:  12/3/2019

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Approved:  12/4/2019

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APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 1/2/2020.

SUPERSEDEENCE:

- This SB supersedes the following SBs: **NONE**

ATTACHMENTS:

- Attachment 1: Section 1.06.25 – Schedule of Operations (5 pages)

REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARD HIGHWAY SPECIFICATIONS, DATED 8/1/2015:

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated August 1, 2015. Said Standard Highway Specifications are hereby revised as follows:

- Refer** to Pages 21 and 22, Section 1.06.25 – Schedule of Operations;
Replace the Section with the attached new Section 1.06.25 – Schedule of Operations.

(NO FURTHER TEXT ON THIS PAGE)

1.06.25 Schedule of Operations.

(A) METHODS.

The Contractor is required to provide the following submittals, in the format, and within the time, described in this Specification:

- Progress Schedule;
- Weekly lookahead schedule; and
- Submittal schedule log and shop drawing submittal log in Excel format (tied to construction schedule), including a description of, and the scheduled submission dates for, all required submittals, approval requests, design mixes, reports, samples, as required by the Specifications and terms of the Contract (“Submittal Schedule Log and Shop Drawing Submittal Log”).

The Contractor must submit a Progress Schedule in compliance with Article 9 of the Standard Construction Contract. The Contractor’s Progress Schedule must be prepared using Department’s selected scheduling software, Oracle’s Primavera P6 Professional Project Management (“P6”) using Critical Path Method (“CPM”) techniques aided with the precedence diagramming method. The version of P6 to be used must be approved by the Engineer. The Contractor will be required to use the Contractor’s own P6 license (whether single-user or Enterprise license), unless otherwise directed by the Engineer. If directed by the Engineer prior to the Notice to Proceed (“NTP”), the Contractor must use the Department’s P6 Enterprise license and develop the Progress Schedule within the Department’s Enterprise environment.

The Contractor must employ or retain the services of a construction scheduler with construction scheduling experience involving the use of P6, subject to review and approval by the Engineer, in consultation with the DDC Infrastructure Program Management scheduling unit. Upon request, the Contractor shall provide the Commissioner with identification, qualifications and experience of the proposed scheduler(s).

As used in this Specification Section, “days” means consecutive calendar days (CCD) unless otherwise specifically noted to mean working days.

(B) SUBMITTALS PREPARATION TIMELINE

Within fifteen (15) days after the issuance of the NTP, the Contractor must submit for approval to the Engineer the following:

- Progress Schedule; and
- Submittal Schedule Log and Shop Drawing Submittal Log

The Contractor must incorporate any corrections/revisions from the Engineer on the Progress Schedule, and is required to provide an updated version of the Progress Schedule for review within fifteen (15) days after the Engineer provides review comments on the Progress Schedule.

Updates to the Progress Schedule, Submittal Schedule Log and Shop Drawing Submittal Log must be submitted monthly until Substantial Completion is reached or as otherwise directed by the Engineer. The Progress Schedule “data date” shall be set to the last working day of the month (schedule period) unless otherwise directed by the Engineer. Updates must be provided to the Engineer no later than fourteen (14) days after the schedule “data date”. Updates shall reflect actual or reasonably anticipated progress as of the last working day of the period.

The Engineer may request meetings with the Contractor to review the Progress Schedule to jointly verify actual activity start dates, actual activity completion dates, percentage of work reported in place (if required), and activity percent completion.

In addition, the Engineer may request meetings with the Contractor’s construction scheduler(s) to resolve out-of-sequence logic, assess the impact, if any of any pending change orders, incorporate accepted time

extensions, review revised logic (as-built and projected) and changes in activity duration, cost, and labor hours assigned.

Furthermore, the Contractor must submit weekly lookahead schedules showing the Contractor's anticipated work schedule for the upcoming week, or as otherwise directed by the Engineer. The weekly lookahead schedules must be submitted beginning on the start date indicated on the NTP through Final Acceptance. Timely submission of these weekly lookahead schedules is critical for preparation of the Weekly Construction Bulletin, which is prepared by the Construction Community Liaison or project staff. If the Contractor fails to timely submit the required weekly lookahead schedule, the Resident Engineer will issue a Field Order.

(C) PROGRESS SCHEDULE FORMAT

The Progress Schedule should utilize the entire Contract duration as specified in the NTP. The Progress Schedule shall be the Contractor's working schedule used to plan, organize, execute, and track the work. The Progress Schedule update is the primary vehicle that must be used to report actual performance, progress, and must clearly convey the Contractor's execution plan, in order to complete all the remaining Work.

The Progress Schedule must show the sequence, in which the Contractor proposes to perform the work, and account for all major and intermediate milestone activities, phasing, restrictions of access, availability of work areas and the availability and use of labor, materials, and equipment.

The Contractor shall ensure and represent that all subcontractors performing any portion of the Work have knowledge and acceptance of the accepted Progress Schedule and the monthly updates.

The amount of detail in the Progress Schedule must be to the satisfaction of the Engineer and must, at a minimum, include:

1. Contract major milestones as set forth in Subsection E below;
2. For all major materials and equipment:
 - a. Separate submittal preparation and approval activities;
 - b. Manufacturing and procurement activities
3. Preparation, submittal, and approval of drawings, samples, and health and safety plans;
4. Preparation, submittal, review, and approval of permits required by all regulatory agencies and other third parties;
5. Performance of tests, submission of test reports, and approval of test results;
6. Completion dates of all items required for phased completion (if applicable);
7. Completion dates of all items required for Substantial Completion;
8. Completion dates for close-out of regulatory and punch list items prior to final payment and transfer of the project.

Activities identified in the Progress Schedule shall have the duration in units of whole working days. Construction activity durations shall not exceed twenty (20) working days unless specifically approved by the Engineer. Durations for non-construction activities such as procurement of materials or delivery of equipment may not exceed twenty (20) working days without prior approval. Activity duration shall be based on the available resources required for performing each activity and shall be the result of definitive labor hours and resource planning by the Contractor to perform the Work and with consideration of on-site work conditions.

Activity descriptions must clearly and uniquely define each activity with a description of the work that is readily identifiable. Each activity must have a narrative description that includes a verb or work function (i.e. submit, test, install etc.) an object (12-inch water main, road base, etc.), and, for any construction activities, a specific location. The work related to each activity shall be limited to one subcontractor's responsibility and one trade.

Activity Relationships must be assigned to clearly establish predecessor and successor relationships to each activity. Open ended activities are not permitted with the exception of the first and last activities in the network, the first activity being the issuance of the NTP, and the last being Final Completion. The use of relationship lag times is discouraged and only permitted with approval by the Engineer; use of negative lag is never permitted.

Activity Constraint Dates are only to be used to reflect contractual or DDC-designated constraints, unless specifically authorized by the Engineer.

Float or slack, in the Progress Schedule, must not be for the exclusive use or benefit of either the City or the Contractor, but is to be available for use by both the City and the Contractor.

The Progress Schedule shall be cost-loaded. Cost loading shall be accomplished by adding a single summary level cost loaded activity in the Progress Schedule. This activity will allow initial generation and monthly update of the planned value that is time-phased into monthly periods. The intent of the cost loading is to facilitate cost forecasting, tracking, and reporting of monthly cost projection. Every month, the cost loaded summary activity shall be updated with monthly forecast for future periods. If there is significant variance between cumulative monthly invoice and the cumulative planned value as of any reporting month, Contractor shall provide the Commissioner with the reason for variance.

(D) PROGRESS SCHEDULE ACTIVITY AND CALENDAR CODING STRUCTURE

1) ACTIVITY NAMING AND CODING

All activities shall be coded inside the P6 PROJECT Environment/PROJECT LEVEL (NOT the GLOBAL Environment/ENTERPRISE LEVEL) to facilitate selection, sorting and preparation of reports. The Contractor will use the Lead FMS ID (included in the NTP) as the Project ID prefix.

Activity Coding shall consist of the Project ID followed by a dash, followed by activity coding (i.e. PROJECT ID-ACTIVITY CODE). Activity Codes must be created at the project level and shall utilize the coding scheme outlined below:

RESP Responsibility – Identify Contractor, Utility, Subcontractor, etc. responsible for the Work.

PHAS Phase – Breakdown of activities in Milestones, Construction, and Closeout Activities.

LOCN Location – Breakdown by Street or intersection.

AREA Area – Breakdown by corner or block. May be used as a subdivision of PHASE to include milestones, permits, subcontractor approvals, submittals fabrication, and delivery. Subdivision of the site into logical modules such as blocks.

TRAD Trade - Breakdown by work type. Examples include:

- SEWER: Sewer main work, including roadway restoration.
- DWM: Distribution water main work, including roadway restoration.
- TWM: Trunk water main work, including roadway restoration.
- ROAD: Roadway construction work.
- SWK: Sidewalk work.
- RAMP: Pedestrian ramp work.
- PLAZA: Plaza work.
- BMP: BMP work.
- GI: Green infrastructure work.

For trades not listed above, the Contractor must submit the proposed trades and their codes to the Engineer for approval.

2) CALENDAR NAMING AND CODING

All calendars created and assigned to activities shall be Project-level calendars. The Contractor shall use the same Lead FMS ID (included in the NTP) that is used as the Project ID prefix for Activity Coding.

The Calendar Name shall consist of the Project ID followed by a dash, followed by a descriptive Calendar Name (PROJECT ID-CALENDAR NAME)

3) WORK BREAKDOWN STRUCTURE NAMING AND CODING

A multi-level hierarchal work breakdown structure (WBS) shall be incorporated in all P6 Progress Schedules. The levels (nodes) shall include, but not be limited to:

LEVEL 01 – is the Contract or Project Level

LEVEL 02 – shall have a minimum of four nodes; Pre-Construction, Procurement, Construction or Phase of Construction, and Closeout, however, the Contract must only use the Construction and Closeout nodes.

LEVEL 03 – Specification Section

(E) MAJOR MILESTONES

The following is a list of Standard Major Milestones that constitute the minimum for Progress Schedule preparation. The content of the Progress Schedule shall not be limited to the list. The Contractor is obligated to include and maintain in the Progress Schedule all applicable milestones that appear after NTP. The Engineer may change, add or modify these milestones as required.

- Issuance of the NTP
- Notice to Utility Co.
- Notice to railroad
- Submit Support of Excavation (SOE)
- Issuance of permit (separate milestones for each permit)
- Approve soil sampling and disposal facility
- Execution of major subcontracts
- Fabrication and delivery of major materials and equipment
- Complete Engineer's Field office
- Mobilization
- Install maintenance and protection of traffic
- Start temporary protection (protective barriers, barricades, walkways)
- Deliveries of all New York City furnished equipment and/or materials.
- Complete demolition of existing structures
- Complete clearing & grubbing
- Complete cleaning pipe and/or drainage structures
- Complete saw cutting
- Start excavation
- Complete sheeting and/or bracing
- Complete pile installation
- Complete leakage testing
- Temporary road or sidewalk restoration
- Complete removal, relocation and resetting of existing FDNY facilities
- Disconnection of utilities and public services
- Start Installation of pipe & fillings
- Complete installation of manholes, chambers and/or catch basins
- Start Installation of distribution valves, hydrants, and iron castings
- Start installation of trunk water main valves, both butterfly and pressure reducing
- Start Installation of site furnishings and/or specialties
- Start final testing
- Complete inspection & testing

- Start installation of reinforcing and misc. steel
- Start concrete placement
- Complete asphalt paving
- Installation/relocation of traffic signal devices
- Complete backfill
- Complete paving
- Complete pavement markings
- Complete landscaping
- Demobilization
- Clean-up
- Substantial Completion
- Final Completion

(F) SUBMITTALS

Every Progress Schedule must be provided with a narrative report. The narrative report must include the following :

1. A discussion of progress through the update period and status of the project with respect to completion of the project schedule.
2. A discussion of changes, delays or other circumstances affecting progress of the project.
3. A listing and brief explanation of modifications to the previously submitted network including logic changes and activity additions, deletions or modifications.

All Progress Schedules and corresponding narrative shall be submitted in hard copy as well as in electronic format on a USB stick or other media accepted by the Engineer. When opened, the electronic format must provide flawless restoration to the native files (P6(.xer) for Primavera schedule files and MS Word and/or Adobe Acrobat for the narrative report and supporting document submittals). Each electronic submission of the Progress Schedule shall be assigned a unique file name consisting of the Project ID (as noted on the Notice to Proceed) followed by a dash followed by a unique file name clearly marked (i.e. ProjID- 000 = rev0, ProjID-001 = rev01 etc.) to indicate the specific submission.

For each submittal of the Progress Schedule, the following layouts, reports, graphics are required and must be included.

An All Activity Detailed Barchart Layout grouped by Activity Code and then sorted by Early Start, Early Finish, and then Total Float. Each activity line shall display the Activity ID (Act ID), Description (Name), Original Duration (OD), Remaining Duration (RD), Start (ES), Finish (EF), and Total Float (TF), Baseline Original Duration (BL OD) Baseline Start (BL Start), Baseline Finish (BL Fin), Baseline Total Float (BL TF). The top line of the barchart area shall contain the early and float bars; the second line of the barchart shall depict the accepted baseline dates showing baseline total float bars.

G) CHANGES, DELAYS, CLAIMS, AND TIME EXTENSIONS

In addition to the requirements outlined in with Article 11 “Notice of Conditions Causing Delay and Documentation of Damages Caused by Delay” of the Standard Construction Contract, the contractor must submit a Time Impact Analysis to the Engineer with all requests for time extension.

The Time Impact Analysis must include a written narrative and supporting impact schedule fragnet detailing the project delays resulting from the alleged delay. The impact schedule, separate and distinct from the Progress Schedule update, shall demonstrate that the changes or anticipated delays affect activities of the current accepted Progress Schedule. The impact schedule shall be incorporated into the Progress Schedule only after it is accepted, and a time extension is approved. The fragnet submitted as part of the Time Impact Analysis must illustrate the impact of these change or delays on the Substantial Completion date.